What is claimed is:

1. Nucleic acid arrays comprising various kinds of single-stranded nucleic acid probes which are capable of hybridizing to nucleic acids and immobilized at different positions on a substrate, wherein said single-stranded nucleic acid probes are immobilized on the substrate by covalent bond; and functional groups which can have negative charge by dissociating in an aqueous solution are present on the surface of regions of the substrate on which no nucleic acid probe is immobilized.

2. The nucleic acid arrays of claim 1 wherein said functional groups which can have negative charge are introduced by the steps comprising: immobilizing single-stranded nucleic acid probes on a substrate; and then immobilizing by covalent bond a compound with the functional groups that can have negative charge onto regions on which no single-stranded nucleic acid probe is immobilized.

3. The nucleic acid arrays of claim 2 wherein said functional group that can have negative charge is a carboxyl group.

4. The nucleic acid arrays of claim 1 wherein said functional groups that can have negative charge are introduced by the steps comprising: immobilizing single-stranded nucleic acid probes on a substrate; and then immobilizing by hydrophobic bond a compound with the functional groups which can have negative charge onto regions on which no single-stranded nucleic acid

probe is immobilized.

5. The nucleic acid arrays of claim 4, wherein said functional group which can have negative charge is either a carboxyl group, a sulfonic acid group, or a hydrogen sulfate group.

6. Nucleic acid arrays comprising various kinds of single-stranded nucleic acid probes which are capable of hybridizing to nucleic acids and immobilized at different positions on a substrate, wherein said single-stranded nucleic acid probes are immobilized on the substrate by covalent bond; and functional groups which are negatively charged by hydrolysis are present on the surface of regions of the substrate on which no nucleic acid probe is immobilized.

7. The nucleic acid arrays of claim 6 wherein said functional groups which are negatively charged can react with functional groups of nucleic acid probes before hydrolysis, and are produced by hydrolysis of regions on which no nucleic acid probe is immobilized after immobilization of nucleic acid probes.

8. The nucleic acid arrays of claim 7 wherein said functional groups are products of hydrolysis of maleimide groups.